DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-026813
Date Inspected: 03-Dec-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Job Site

CWI Name: Fred Von Hoff

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG Sections

Summary of Items Observed:

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Orthotropic Box Girder (OBG):

13E/14E-weld joint D-3: This QA Inspector observed ABF welding personnel James Zhen (#6001) setting up to use the Flux Cored Arc Welding (FCAW) process to continue welding from inside the OBG section at this location. This QA Inspector observed QC Inspector Fred Von Hoff monitoring the work at this location during the shift. This QA Inspector performed a verification of the welding parameters and observed the parameters were within the range of the Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-1 being used by the QC Inspector. The following parameters were observed; 270 amperes and 25.3 volts at a travel speed of 380 mm per minute to produce a heat input value of 1.07 Kj per mm. This QA Inspector welding was completed at this location this shift.

13E/14E-weld D-1 (SPCM) Repair: This QA Inspector observed ABF welding personnel Wai Kitlai (#2953) using the carbon arc process to excavate 2 defects side by side each other from the bottom of the OBG section. This QA Inspector observed QC Inspector John Pagliero monitoring the work. This QA Inspector verified the base metal had been preheated to a minimum of 225°F with QC Inspector John Pagliero prior to starting the carbon arcing. This QA Inspector observed the defects were located side by side at basically the same Y location

and ran for the same length. This QA Inspector observed QC Inspector John Pagliero perform a visual and Magnetic Particle Testing (MT) inspection on the completed excavation area, which measured; 210 mm long, 40 mm wide and 20 mm deep. This QA Inspector was informed he had accepted both inspections prior to performing a visual verification of the excavation, see photo below. This QA Inspector observed the liquid induction heating system had been formed into a coil and placed on the base metal above to provide the preheat and post heat. This QA Inspector verified the preheat was greater than 325°F with a temperature indicating marker prior to the start of welding. This QA Inspector observed QC Inspector John Pagliero verify the following Shielded Metal Arc Welding (SMAW) parameters for ABF welding personnel Wai Kitlai (#2202); 130 amperes. This QA Inspector observed a 3.2 mm diameter E7018H4R electrode was being used in the overhead (4G) position. The welding observed appeared to comply with ABF-WPS-D15-1004 Repair being used by the QC Inspector. This QA Inspector periodically monitored the work at this location. This QA Inspector observed the induction heating equipment had been set for 540°F, which exceeds the minimum but not the maximum temperature for the Post Weld Heat Treatment (PWHT). This QA Inspector verified with QC Inspector Fred Von Hoff, who was monitoring the PWHT, the base metal was within the required range of 450 to 600 degrees F. This QA Inspector observed the PWHT was maintained approximately 1-1/2 hours this shift. The base metal thicknesses range from 30 to 35 mm at this weld joint. The overall work observed at this location appeared to comply with ABF-WPS-D15-1004 Repair being used by the QC Inspector. This QA Inspector observed the repair welding and PWHT were completed this shift.

13E/14E-weld joint H (SPCM): This QA Inspector observed QC Inspector John Pagliero performing Ultrasonic Testing at this weld joint from outside the OBG section. This QA Inspector observed he was using both a straight beam technique checking for laminations in the material. This QA Inspector later observed a 70 degree shear wave transducer was being used for the volumetric inspection of the weld metal and heat affected zone of the base material. The UT observed by this QA Inspector appeared to comply with the contract requirements. This QA Inspector observed the UT from this location appeared to be completed this shift.

13E/14E-weld joint A-2.2 + 1500 mm (SPCM): This QA Inspector observed QC Inspector John Pagoliero setting up to start performing UT at this location. This QA Inspector questioned QC Inspector John Pagliero regarding the completion of the visual and Magnetic Particle Testing (MT) on the underside (inside section of this weld) and was informed that he was not sure of the status. This QA Inspector and QC Inspector John Pagliero looked for any markings indicating that QC personnel had previously performed and accepted the visual MT inspections, but did not observe any markings. This QA Inspector and QC Inspector John Pagliero proceeded to the inside section of the weld (face B) and this QA Inspector observed as QC Inspector John Pagliero performed a visual inspection and observed several areas were marked for grinding and several areas marked (undercut) for additional welding. QC Inspector John Pagliero stated the UT would not be performed this shift due to the need for additional welding. This QA Inspector did not observed any welding being performed at this location this shift.

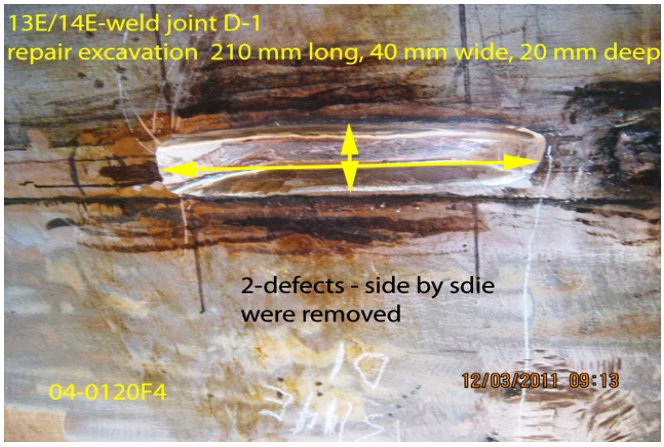
13E/14E weld joint I (SPCM): This QA Inspector observed QC Inspector Jesus Cayabyab performing UT from inside the OBG section at this weld joint. This QA Inspector observed the UT started from the bottom, adjacent weld H, and progressed upward. The UT scanning technique appeared to comply with the contract requirements. This QA Inspector was informed by QC Inspector Jesus Cayabyab he had rejected 2 areas within the first 2,000 mm of the UT inspection. This QA Inspector observed the UT was not completed this shift.

This QA Inspector verbally informed QA SPCM Lead Inspector, Daniel Reyes, of the issues noted in this report

for compliance therefore for further details of issues of significance see QA SPCM Lead Inspector, Daniel Reyes, Daily Inspection Report (6031) for this date.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above and noted above there were no notable conversations.



Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer